Supporting Concept Teaching with Activities in Primary School Third Grade Life Science Course[*]

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ABSTRACT

This research aims to support the "teaching of concepts" in the 3rd grade Life Science Course with activities. A quasi-experimental design (selective) with a pre-test and post-test control group, one of the quantitative research designs, was used in the research. Using songs, poems, rhymes, acrostics, stories, fairy tales, riddles/puzzles, animations, and traditional children's games, the experimental group's success in acquiring certain concepts from the third-grade life science course was enhanced by developing and implementing the above activities. Research data were collected with the "Concept Achievement Test" developed by the researcher by quantitative research data collection techniques. In the data analysis, arithmetic means were used to determine the academic success of the experimental and control groups. The Independent Sample t-Test was used for comparisons between groups. As a result of the research, there was a considerable achievement gap between the experimental and control groups, with the experimental group performing significantly better. According to these results, activities structured with songs, poems, nursery rhymes, acrostics, stories, fairy tales, puzzles/riddles, animations, and traditional children's games significantly impact student success in teaching concepts in third-grade elementary school biology classes. These activities apparently increase student success rates and are useful in this regard.

1. Introduction

People are usually born with the equipment necessary to acquire basic life skills. However, is equipment alone is insufficient in all areas of life. Because: knowledge, skills, and values that a person needs in their life are acquired or developed according to the conditions to which he is exposed.In this process, people's education and training has a vital role in their life. It can be said that it is important to give these knowledge, skills, and values systematically to gain them effectively. According to Hayran (2010), the inclusion of school in human life has led to important developments. At the beginning of these, children encounter a wider, more active environment and begin to systematically acquire the knowledge, skills, and values necessary for their lives. According to Ülgen (2004), learning the concepts that form the basis of the knowledge and skills necessary for a person's life begins with birth but takes place in a planned manner only in schools.

The goal of science education taught in the first three years of elementary school is specifically to help students acquire the basic knowledge, skills, and values they will need and be able to apply in daily life (Ministry of National Education [MoNE], 2009). Because the concepts that form the basis of the knowledge and thought structure that people form throughout their life (Dündar, 2007) are beginning to be structured systematically,

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especially in the Life Science course in this period. In fact, according to many experts, many concrete or simple abstract concepts can be acquired by experiencing, seeing, or hearing in the pre-school period. For example, according to Senemoğlu (2018), abstract concepts such as clean and naughty can be learned from an early age by observing, experiencing, seeing, or hearing. However, learning more complex, defined, or abstract concepts often requires instruction. On the other hand, according to Piaget, concepts begin to form realistically during this period, especially since the cognitive concrete period begins after leaving the pre-operational stage. This is the period when the child starts school, and the life science course comes into play.

Children get acquainted with the life science course at a young age and form the basis of their future life with the knowledge, skills and values they will gain in this lesson (Ocak & Beydoğan, 2005). For this reason, the 1st, 2nd and 3rd years of primary school are very important (Aladağ, 2016). Especially from an early age (in the concrete operations phase), the Life Science course has a very important role in teaching the concepts to the child accurately and systematically. Because the learning outcomes gained in these years are highly likely to be permanent. In fact, mislearning persists for a long time and negatively affects future learning. For example, these mislearning often cause important misconceptions. In particular, basic misconceptions negatively affect many learning experiences and become more difficult to correct in the future.

As it is known, correcting mislearning is more difficult than teaching something for the first time. It seems even more difficult to change mislearning, especially at an early age. Considering that the permanence of the learning outcomes gained at early ages is more permanent, it will be a very difficult task for both the child and the teacher to change a learning outcome that the child has coded in his mind to realize a new learning. Therefore, laying the foundations of the concepts correctly at an early age, especially in the Life Science course, which forms the basis of many courses (Aladağ, 2016; Belet, 1999), will positively impact future education life.

Otherwise, the individual will have to deal with misconceptions and mislearning. According to MEB, concepts organize and combine a lot of information on a particular subject; they help to think, understand and make sense of it. In fact, an important part of the teaching consists of the learning outcomes that are tried to be given by teaching the concepts. Suppose the teaching of concepts does not take placeoccur while a lesson is being taught. In that case, there cannot be a complete learning, and even the realization of understanding and thinking processes does not seem possible (MoNE, 2005a). According to another definition, concepts are a mental tool and help people to think and contribute to making broad information usable. In short, they are mental tools that enable people to realize something. In addition, concepts are a category method that groups similar items, people, thoughts, and processes (Senemoğlu, 2018). Therefore, if the concepts are taught correctly, in a planned and effective way in the education-teaching processes of the relevant course (Altıntaş & Yorulmaz, 2018):

- ✓ Students experience an increase in academic success.
- ✓ Learning and remembering become easier.
- ✓ Teaching becomes personal.
- ✓ Students gain effective communication skills.
- ✓ Students can develop problem-solving and reasoning skills.

If concept teaching is not carried out in a correct, planned, and effective way, it is seen that adequate perception, understanding, and understanding cannot be achieved, and as a result, people often have misconceptions. This situation causes very important problems such as generalization errors, distinction errors and misconceptualization in the following processes (Tokcan, 2015). In addition, as mentioned above, these problems negatively affect students understanding and thinking about the subject (MEB, 2005a, p. 80). For these reasons, considering that the concepts learned in the primary school Life Science course will form the basis for the individual's daily life and future learning, it seems that learning the concepts correctly and effectively in this course is very important.

However, learning and making sense of concepts correctly and effectively seems difficult for primary school children (especially in the 1st, 2nd and 3rd grades of primary school). Because, according to many experts, the concepts are not concrete. We cannot call an event, a thing, a person a concept. Concepts are made up of abstract ideas. In the world we live in, there is no such thing as a concept. Some examples represent the concept. In other words, concepts come to life in ideas (Çaycı et al., 2007). So when we talk about a concept, we are actually talking about an abstraction in the real sense. On the other hand, Abstraction involves making

a distinction, recognizing and learning as a result, and clearing and choosing the appropriate one. Humans are the most intelligent creatures in the universe, they can do very complex mental processes and this is due to the brain's ability to abstract. This ability is shaped through language mostly. Language shapes the mind through concepts. At the root of concept, learning is the ability to abstract, which enables concept creation (Karataş-Coşkun, 2011). However, since this ability is not sufficiently developed in children who have just entered the concrete operational stage, they will have difficulty in abstracting sufficiently. This situation can cause children in the early elementary years to have difficulty learning or forming concepts, to learn incorrectly, or to become alienated from the appropriate course.

Examining the literature in this context reveals a variety of methods and techniques for presenting concepts. Concept Maps, Concept Networks, Meaning Analysis Tables, Concept Puzzles, Concept Cartoons, Concept Analysis Cards, Concept Development Forms, and Conceptual Change Texts (Alkş, 2014; Dündar, 2011; MoNE, 2005b; Tokcan, 2015; Yel, 2007) are the most prevalent types (Alkş, 2014; Dündar, 2011; MoNE, 2005b; Tokcan, 2015; Yel, 2007). However, it may not be sufficient for concept instruction, particularly in the early years of primary school, to explain the definitions of something in a given lesson time, to list the qualities that define it, to analyze them, to establish their relationships, or to identify particular properties.Because, according to many experts, concept learning occurs at certain stages and under the influence of many factors such as the developmental stages, knowledge, skills, mental capacities, emotions, thoughts, and experiences of children, as well as the methods-techniques, materials, and learning environments created in the teaching processes (Tahiroğlu & Esener, 2021).

For example, educational activities enjoyed by every age level are different. In the pre-school period, children enjoy using crayons, or the activities consisting of games, songs, and nursery rhymes are dominant (MEGEP, 2009). This situation remains valid as it continues in the first years of primary school. Therefore, in teaching abstract meanings such as concepts, especially in the first years of primary school (1-2-3), it is very important for the child to learn by doing, to become fun, and to reduce them to a more concrete form suitable for their level. Games have an important place in children's lives and learning with games can be remembered more easily. Similarly, alternatives such as nursery rhymes used by children in this age group in games, songs they sing daily, poems, riddles, puzzles, and stories will significantly contribute to their learning of concepts more efficiently, precisely, and easily.

Because children in elementary school have an expansive imagination. Therefore, using fairy tales in the classroom will enhance the learning experience. The child will have fun, establish connections between his own world and his imagination, and be influenced by the stories he or she hears (Şahin, 2011). This effect also plays an important role in children's cognitive development (Kaya, 2018). In light of this, it is evident that using fairy tales in concept instruction will help children learn while having fun. Because a child who combines his or her own world with his or her own imagination will be influenced by fairy tales. Consequently, it is highly probable that concept acquisition will become more permanent in the mind.

On the other hand, making use of riddles in the learning-teaching processes makes the process fun. One benefit of riddles is to improve vocabulary. According to Hayran (2010), the person who encounters the riddle also makes guesses to find the hidden answer, or even guesses without knowing the answer, which enables him or her to form a mental schema of the concept in order to comprehend and parse it. Therefore, the use of riddles while teaching a concept will have an effect on the interpretation and separation of the concept.

Rhymes, on the other hand, contain funny elements. These funny elements leave a trace in the person's memory and affect language skills developmentally (Yalçın & Aytaç, 2017). The use of nursery rhymes in concept teaching will attract the student's attention and make it easier to remember the concept.

The Turkish Language Association (Turkish Language Institution [TDK], 2020) defines an acrostic as "verse, poetry, arranged so that a word emerges when the first letter of each line is read from top to bottom." The use of acrostic in concept teaching will help students' permanent learning as it supports their memory. Coding new or first-time information makes it easier to remember. Therefore, using acrostic in concept teaching will contribute to establishing a strong link between the knowledge of the learned concept and recognizing that concept more easily.

It is thought that teaching with music will also be effective in learning. Because it takes place in a process where music and knowledge are not memorized, the effectiveness of music is assimilated, and the teacher is the guide, not the leader (Bilen & Açıkgöz Ün, 2019). With educational songs and games, the negativities in traditional education can be changed, and education can become enjoyable. It is giving the student the information hidden in the song rather than teaching it will motivate the student even more (Gürbüz et al., 2017). For this reason, while performing concept teaching with songs will provide entertainment, on the other hand, giving hidden information will make concept teaching more effective.

Another effective method to be used in the primary school period is the method of teaching with games. Using this method, difficult subjects for children can be taught easily and the learning activity can be made more interesting for them. If teaching is provided using the game method, an enjoyable classroom environment is created by preventing the abstract lessons that are difficult to understand from being boring. Thus, the child who desires to learn all the knowledge and skills to be acquired immediately learns/gains. While playing games, they both have fun and learn without realizing it. In other words, using the game teaching method makes the education environment fun (Uskan & Bozkuş, 2019). In addition, the game teaches children to find the truth through trial and error, finish the work they have started, and make an effort to achieve something (Semerci, 2019). Therefore, teaching concepts with games will have an effect on making the concepts, which are abstract words, more meaningful in the student's mind, as it will enable the student to become active, have fun while learning, and make the concepts more concrete.

As a result, considering the above explanations, it can be said that the reason for students' misconceptions from their inability to correctly and effectively gain the concepts learned at an early age. Because it is believed that children's inability to abstract sufficiently at a young age causes them to struggle with learning concepts and to fall prey to misconceptions. On the basis of these ideas, it was deemed necessary to create activities that children can enjoy, engage in, and learn through. As a result, activities based on fairy tales, traditional children's games, songs, nursery rhymes, poems, acrostics, and the like were designed and their contribution to concept instruction in the Life Science course was investigated. This research aims to use activities such as fairy tales, stories, traditional children's games, plays, songs, nursery rhymes, poems, riddles, and acrostics for concept teaching in elementary school life science course and evaluate the results.

2. Methodology

2.1. Research Model

This study was conducted with the purpose of demonstrating the differences between the success of students who participated in the sessions to implement the activities prepared for concept instruction in the life science course using traditional children's games, songs, poems, riddles/puzzles, drama rhymes, acrostics, stories, and fairy tales, and students who did not participate in the pre-test and post-test. The test was carried out according to the experimental model with the control group. In the pre-test and post-test experimental model with the control group, two groups were formed, one for the experiment and the other for the control group, by selective assignment method, and measurements were made on these groups before and after the experiment.

2.2. Study Group

An easily accessible sample was adopted in the determination of the study group of this research. Due to being easily accessible by the researcher, 3/A and 3/B class students in a primary school in Nevşehir Central district were chosen as the research sample in the 2020-2021 academic year. The selective assignment method was adopted in determining the experimental and control groups. For this purpose, Class 3-B was designated as the experimental group and Class 3/A as the control group. There are 21 students in both the experimental and control groups.

2.3 Experimental Process

2.3.1. Preparation of the Application

- Permission has been obtained from the relevant authority.
- Data collection tools were prepared.

- The activities to be used in the experimental process were prepared for the concepts and performances in the Life Sciences Program of the Ministry of National Education. The activities were prepared during this process:
  - Activities were prepared with fairy tales, poems, animations, and the traditional game "Yağ satarım, Bal Satarım" to gain the concept of "thriftiness".
  - To gain the concept of "accident", activities were prepared by using the traditional game called "Köşe Kapmaca", animation and acrostic. To gain the concept of "earthquake", the traditional play "Istop", the song (Appendix-1), the words of which were written by the researcher and the composition was made by the music teacher Abdulsamet Gencel, the puzzle and the activities called "Nesi Var" were prepared.
  - To gain the concept of "fire", activities were prepared by using the traditional game called "Hımbıl" (Annex-2), story, animation and nursery rhyme.
  - Activities were prepared using traditional games, songs, animations and riddles called "Old Minder" to gain the concepts of settlement units (province, district, town, neighborhood, village).
- Lesson plans have been created for the achievements to teach the concepts, and the above activities are included in these plans. In addition, in the primary school curriculum, the Life Science course is 3 hours per week and 40 minutes per hour. The implementation process of the concept activities was planned and arranged accordingly.

2.3.2. Implementation of the Application

- ✓ Experimental and control groups were determined.
- ✓ Concept Achievement Test was applied to the experimental and control groups as a pre-test.
- ✓ Activities for the experimental process have been put into practice.
- ✓ The implementation process was carried out in 18 lesson hours in 6 weeks.
- ✓ The practice was concentrated in the period when the schools were opened (both in the experimental and control groups), that is, when face-to-face education was carried out. Because, considering that the face-to-face application of the activities would be more effective and a consensus was reached with the control group teacher, it was decided to give the relevant acquisitions in the face-to-face application processes. This indicates that the learning outcomes are tried to be gained simultaneously in the experimental and control groups. Therefore, the activities were implemented when the schools opened for face-to-face education and the lesson plans were adapted accordingly. Likewise, the relevant learning outcomes were given to the control group in face-to-face training processes.
- ✓ The concept Achievement Test was applied to the experimental and control groups as a posttest.
- ✓ The data obtained were analyzed and interpreted by the researcher.

2.4. Data Collection Tools

Quantitative data collection tools were used in this research. These tools are the Concept Achievement Test, developed by the researcherthe researcher by taking expert opinions. The concept achievement test consists of 39 true-false, fill-in-the-blank and multiple-choice questions to cover all the concepts used in this research. While preparing the questions, the primary school Life Science 3rd-grade textbook and workbook, as well as the Life Science unit evaluation books (Beş Yıldız Publishing, 2020; Kırmızı Beyaz Publishing, 2020) were used. The validity and reliability of this test was conducted with 171 3rd grade students from 5 different primary schools. The data obtained from these students were analyzed and the test's average item difficulty value (Pjx) was found to be 0.53, the item discrimination value (Rjx) was found 0.51 and the KR 20 value was found 0.82. In addition, expert opinions and approvals were obtained for the test's spelling control and content validity.

2.5. Data Analysis

After the results of the pre-test and post-test of the experimental and control groups were obtained, it was found that the data had a normal distribution according to the results of the Shapiro-Wilk analysis and the Skewness/Kurtosis values in the comparisons between the groups (For the pre-test: According to the Shapiro-Wilk result, the experimental group's data was p= 0.060; the control group's data was p=0.328. For the post-test, the Shapiro-Wilk result was p=0.685 for the experimental group and p=0.328 for the control group). Considering this situation, the independent samples t-test was used to compare the success of the experimental and control groups. A confidence level of 0.05 was assumed as the significance level.

2.6. Ethical

This study has been prepared by considering research and publication principles and ethical criteria. Nevşehir Hacı Bektaş Veli University Scientific Research and Publication Ethics Committee's Ethics Committee Approval with decision number 2021.03.07 and research permissions numbered E-82671082-44-24278384 from Nevşehir Governorship Provincial Directorate of National Education were obtained. Responsibility for research ethics that may arise within the scope of the prepared article belongs to the authors.

3. Findings

At this stage, the findings obtained from the analysis of the data obtained during the research process are presented below. These findings:

Findings of academic achievement pre-test and post-test scores in the group comparison

Within the scope of this study, the success levels of the students in the primary school 3rd grade Life Science Course concept learning process of the learning-teaching process structured by using traditional children's games, songs, poems, riddles/puzzles, dramas, nursery rhymes, acrostics, stories and fairy tales, and the normal education curriculum pre-test and post-test scores of the subjects in both groups were compared separately to test its effectiveness on the findings regarding these comparisons are shown in Table 1.

Table 1. *Independent Sample t-Test Results of the Students in the Experimental and Control Groups on Life Science Course Concept Achievement Pre-Test and Post-Test Scores*

Groups		N	$\overline{\mathbf{X}}$	S	Sd	t	p
Experimental	Pre-Test	21	11.85	4.91	40	10.56	.000*
	Post-Test	21	25.90	3.60			
Control	Pre-Test	21	10.85	4.31	40	4.155	.000*
	Post-Test	21	15.52	2 .79			

*p<0.05

As seen in Table 1, the pre-test mean of the experimental group was 11.85, while it increased to 25.90 after the post-test application. This difference was also statistically significant when tested with Independent Sample t-Test (t(40)= 10.56; *p<0.05*). In the control group, while the pre-test average was 10.85, this score increased to 15.52 after the post-test. This difference was also found to be statistically significant when Independent Sample t-Test were tested with the t-test (t(40)= 4.155; *p<0.05*). As can be seen, after the experimental procedure, there were significant differences in favor of the post-tests between the pre-test and post-test applications in both groups. However, an increase of 14.05 points was observed between the pre-test and post-test application of the experimental group; 4.67 point increase was observed between the pre-test and post-test mean scores of the control group. In other words, the average success in the class where concept teaching is carried out with the activities developed during the research (traditional children's games, songs, poems, riddles, plays, nursery rhymes, acrostic and fairy tales) is significantly higher than the average in the class where concept teaching is carried out according to the normal curriculum.Intergroup analyzes to examine the statistical significance of these differences are presented below.

Findings of academic achievement pre-test and post-test scores in the comparison between groups

To understand whether there is a significant difference between the experimental and control student groups in terms of academic achievement in Life Science Course concept teaching, the pre-test results are analyzed and given in Table 2.

Table 2. *Independent Sample t-Test Results on Academic Achievement Pre-Test Scores of Experimental and Control Group Students*

Groups	N	$\overline{\mathbf{X}}$	S	Sd	t	p
Experimental	21	11,85	3,30	40	1,058	,296*
Control	21	10,85	2,79			

*p<0.05

As seen in Table 2, the difference between the arithmetic means of the groups was not statistically significant (t (40)=1,058; *p>0.05*). Based on this result according to the pre-test data, there is no significant difference in the

level of success between the experimental and control groups. This indicates that the experimental and control groups were equivalent to each other before the experimental procedure.

After the findings obtained from the pre-test results, the activities prepared for the experimental group were applied (the current curriculum was applied to the control group), and the post-test mean scores of the subjects in both groups were analyzed to test whether this application was effective on the students' level of gaining the relevant concepts. The results of this analysis are given in Table 3.

Table 3. *Independent Sample t-Test Results on Academic Achievement Post-Test Scores of Experimental and Control Group Students*

Groups	N	$\overline{X}$	S	Sd	t	P
Experimental	21	25,90	1,57	40	9,504	,000*
Control	21	15,52	4,74			

*p<0.05

Table 3 shows a significant difference in favor of the experimental group between the arithmetic averages of the groups forming the sample. This difference was also found to be statistically significant when Independent Sample t-Test were tested with the t-test (t(40)= 9.504; *p<0.05*). This finding reveals that the success levels of the experimental group students were much higher than the control group students after the application. In other words, the activities prepared within this study's scope significantly increased the students' scores in the concept teaching processes of the 3rd grade Life Science course.

4. Conclusion and Discussion

When examining the results of the achievement tests of the students who participated in the study prepared for the concept learning process of the 3rd grade life science course, it was found that the achievement levels of the students in the experimental and control groups were very close on the pre-trial measurements (there was no significant difference between the achievement levels).In the measurements made after the experimental procedure, it is seen that there is a significant improvement between the success levels of both the experimental group and the control group. This is due to the fact that both the learning-teaching processes structured by using traditional children's games, songs, poems, riddles/puzzles, dramas, nursery rhymes, acrostics, stories, and fairy tales, and the activities carried out within the framework of the curriculum of the primary school 3rd grade Life Science Course concept learning have a positive effect on the level of educational success. In contrast, when comparing the pre-test and post-test scores of the experimental and control groups, there was a significant difference in favor of the experimental group when comparing the post-test scores. These results indicate that the learning-teaching processes structured around the use of traditional children's games, songs, poems, riddles, dramas, nursery rhymes, acrostics, and fairy tales have a greater impact on the achievement levels of students in the third grade Life Science course.

This research aims to develop activities that children can learn by having fun, concretizing and enjoying in order to increase the effectiveness of concept teaching in the 3rd grade life science course in primary school. This is because (as pointed out in the literature section of this study) it has been found that children have problems acquiring concepts at a sufficient level and fall into misconceptions because they cannot abstract enough at an early age and cannot be sufficiently motivated for the learningand teaching process, especially because they are still at play age.For this reason, it is considered very important that concept teaching, which is one of the most important steps of teaching in the life science course in the first years of primary school (1st, 2nd, and 3rd grades), is given with fun, concretization and enjoyment following the level of children. However, there are no studies (within the studies that can be examined) on how to design and use such activities, which are thought to have a very important place in the learning-teaching process in the concept teaching of the life science course. However, many studies in the literature show that the use of children's games, songs, poems, riddles, dramas, nursery rhymes, acrostics, stories, and fairy tales at early ages contribute to learning by making it fun, embodied, and enjoyable, and by increasing achievement levels.

In this context; Yılmaz (2019) found a significant difference in favor of the experimental group in the pre-test and post-test mean scores in the problem-solving achievement test conducted in his study on the effect of using the game teaching method on attitude and success in gaining problem-solving skills in a primary school mathematics course. Savaş and Gülüm (2014) found a significant difference in favor of the experimental group

in their study (an experimental study) on the effect of teaching with games on success and retention. As seen in this study, teaching with games at an early age affects success and permanence positively. Similarly, in his study, Hanbaba (2011) named the effect of the game teaching method on primary school 3rd-grade students' success and attitude in the life science course revealed that the success scores were in favor of the experimental group in the post-test. On the other hand, in their study titled "Game-Based e-Learning is More Effective than a Conventional Instructional Method: A Randomized Controlled Trial with Third-Year Medical Students", Booker et al. (2013) found that students who took a game-based learning approach had more fun and demonstrated that they performed more metacognitive behavior. Lengyel (2020), on the other hand, argued that the educational and digital game-learning method is effective in his study named "Can the game-based learning come".

In his study of the use of songs in teaching vocabulary to young students in a foreign language classroom, Atılay (2017) found that the use of songs was remarkably effective. In their study of teaching and learning science lessons through song, Governor et al. (2013) discovered that learning science lessons through song is very enjoyable for students, and that they learn science by having fun. In terms of academic achievement, it was also stated that a level of improvement had been achieved. Metin (2019) discovered a statistically significant difference between the effects of musical stories and fairy tales on the levels of creativity of pre-school children in favor of the experimental group.In this context, Yemenici (2019) revealed that activities with fairy tales in Turkish teaching were effective on listening skills. In this study, it was stated that music and story affected the creativity levels of pre-school children. Alkan Yılmaz (2019) states that in the study of the effect of nursery rhymes on developing fluent reading skills of primary school fourth-grade students, the activities that include rhymes applied in the experimental group have a significant effect on the reading speed Research conducted by Öz (2019) on the impact of creative drama on concept teaching in the Social Studies course found a statistically significant improvement for students in the experimental group; research by Falkner et al. (2012) on the growth of fundamental ideas through puzzle-based instruction found similar results.As a result of that research, they stated that teaching with puzzles improved problem-solving skills and access to information more easily.

Based on the findings of these studies, it is expected that traditional children's games, songs, poems, nursery rhymes, fairy tales, stories, riddles, puzzles, acrostics, and dramas will contribute significantly to the acquisition of concepts in the Life Science course by having fun, concretizing, and enjoying. Based on this assumption, concept teaching activities were developed using songs, poems, nursery rhymes, fairy tales, stories, riddles/puzzles, acrostics, and dramas; among the children, games such as "eski minder," "köşe kapmaca," "istop," "hımbıl," and "yağ satarım bal satarım" were adapted and applied to the relevant concepts. In fact, at the end of the application, it was discovered that concept teaching supported by traditional children's games is significantly effective. This situation demonstrates how traditional children's games can be used to teach concepts while also improving children's physical, mental, emotional, social, and psychomotor skills. In this context, Nosirova (2020) discovered that pre-school street games (most of which are included in 'traditional children's games' in our case) have a significant impact on the formation of the child's spirit and development. The activities structured with songs, poems, riddles/puzzles, dramas, nursery rhymes, acrostics, stories, and fairy tales made the learning-teaching processes especially fun and interesting, increasing the success level in concept teaching and being quite useful, according to the findings of this study.

On the other hand, since this study was conducted face-to-face when returning to school after the pandemic period, it was observed that the students participated in the activities (especially in terms of face-to-face and live participation) quite enthusiastically and eagerly. This situation shows once again how important lively, fun, concrete and lively activities are on primary school students' interests, desires and motivations.

5. Recommendations

As a result of the research, the implementation of activities structured by using songs, poems, nursery rhymes, acrostics, fairy tales, stories, riddles/puzzles, and traditional children's games in line with the interests, needs, and levels of primary school 3rd-grade students made significant contributions to the learning of some concepts in the life science course. Therefore, it is important to analyze students' problems and misconceptions about the concepts, identify the deficiencies in the subject, and determine and apply the appropriate techniques to address those deficiencies.However, some problems may occur in these processes. For example,

there were problems in the implementation process of this research, especially in the implementation of some of the activities related to traditional children's games in the classroom (due to reasons such as lack of physical space, etc.). Considering such situations, planning the application environments in advance or designing the activities in the environment is recommended.

Another problem is the participation of students in each activity. For example, not every student wants to sing. Then, there may be problems in terms of participation of all students in the activities. For example, in this research, a shy student did not want to sing individually in the classroom. In such cases, students can be provided to accompany the group or sing in chorus to keep them motivated and willing. In such cases, it should be essential for each student to participate in activities that appeal to them, considering their differences.

The activities in this study relate to concept teaching in science courses. However, they can also be used in other subjects such as social studies, Turkish, mathematics, and even science, biology, and geography if they are designed according to the content and level. A quantitative research design was used in this study, but more in-depth results can be obtained with qualitative or mixed methods research. For example, student opinions can be solicited or observations can be conducted for the purpose of process evaluation. Action research or case studies can also be conducted on this topic. This research conducted in person, and the same study or similar research can be adapted online and conducted through distance learning. Such studies can be uploaded to the EBA platform for teachers to access to facilitate access for practitioners.

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Appendix-1: The Song "When There's an Earthquake"

DEPREM OLUNCA

PINAR ESENER

Deprem Olunca

Deprem olunca
Sallanır her yer
Sakın panik olma   X 2
Sakin kal yeter

Deprem sırasında
Çök, kapan, tutun
Deprem bitince hemen   X 2
Binadan koşun

Appendix-2: "Hımbıl" Game Activity (40 min.)

Rules of the Game:

1. It is forbidden to look at the cards of the players around you in the hımbıl game. In this case, you will receive penalty points. You can set the penalty score before you start the game. Example: 100 points penalty. (Doing a slouchy in 1 round is 100 points. The player loses a hımbıl.)

2. 2. In the hımbıl game, an object equal to the number of players is determined. The specified object can be anything. In our prepared game, instead of object names, fire brigade, gendarmerie, ambulance, police, forest fire will be written.

3. Each emergency is written on a piece of paper as many as the number of players.

4. Pen and paper are prepared and a player is assigned to write down the scores.

5. The direction of the game is clockwise, that is, from right to left.

6. In each round, each player has to give a card to the person next to him.

7. The aim of the game is to collect all the papers with the same object in your hand.

8. Except for the player who starts the game first, no player can do a slouchy without giving a piece of paper from his hand. Example: You have 3 firefighters and 1 gendarmerie. The next player has given you a fire engine. You have now completed the 4 firefighting card, but you cannot do slouches this way. To make a hımbıl, you can give the other gendarmerie paper to the player next to you and do a hımbıl. However, he should not wait after giving the paper here. Otherwise, there is a possibility that the person to whom the paper is given will also slurp. If the player to whom you gave the card acts quickly and quickly gives the extra card to the person on his left and hımbıl, you lose your right. But here the player who starts the game is the exception. Because the first player already started with 4 cards, he can do a slouchy without laying any cards.

9. The player who collects the same cards "Hımbıl!" He/she quickly puts his hand in the middle of the playing field. The score for the player who collects the first cards is standard. But other players will score points according to the order of making hımbıl, not according to the cards in their hands. So if you are not the first person to do the slouchy, you should prepare for the second slouchy very quickly.

10. The player who does the slouchy gets 100 points. The hand on the slouchy player gets 75 points. The next player gets 50 points. The next player gets 25 points… If you have more than 4 players, you can set the points before starting the game (For example, 100-80-60-40-20 for 5 players)

11. On a different paper, a digit is opened for each player and the points they get from the rounds are written on these digits. Players can play as many rounds as they want. There is no limit on the number of tours. However, it is important to determine from the beginning how many rounds will be played, in order to prevent the loser from trying to prolong the game.

12. When the game is over, the points are added up. The player with the most points wins the game.

Game Play:

1. For the preparation of cards, first the number of players is determined and the cards are prepared.

2. Fire department, Gendarmerie, Police, Ambulance, Forest Fire… names and their emergency phone numbers are written on paper as many as the number of players. (Here, 5 pieces of fire department for 5 players, 5 pieces of ambulance, 5 pieces of forest fire, 5 pieces of gendarmerie on 5 pieces of paper, 5 pieces of police on paper). The prepared papers are reviewed again and any missing and errors are corrected. These papers are then folded so that the players cannot see the text.

3. The player to start the game is selected. For the game, the player who shuffles the cards, plays first and writes the scores is selected. For this, counting is done by saying the following rhyme (prepared for the concept of fire):

Ooooo,

> There was a house
> There's a fire
> Everyone is scared
> Don't be afraid,
> Call the fire department
> Here is the number
> 10-20-30-40-50-60-70-80-90-100-110.

4. Papers will be folded and handout. In this process, the first player or any player shakes the cards in their palms and shuffles them and leaves them in the middle of the players. Players get 5 cards at random. These papers are starting papers.

5. The player to start first was determined beforehand. This player gives an unsuitable piece of paper to the player on his left by dragging it with the text down (not being read by the others). Each player continues in this way by giving one of his cards to his/her friend next to him/her.

6. In this process, the person who collects the same papers (fire department) from a series, gives the excess paper in his hand to the person on his left before slouching, and then puts his hand in the middle and says hımbıl (However, he should not wait after giving the paper. Otherwise, there is a possibility that the person to whom he gives the paper will also slurp). This rule does not only apply to the first player. The player who slouches means that he has won that round and gets 100 points, that is, full points.

7. Other players must quickly squat on the hand of the slouching player. Because scoring will be done in order of hımbıl from bottom to top.

8. Scoring: The player to the first slouchy is 100, the hand over his hand is 75, and 50 in turn, 25

9. The points received are written to the players' account.

10. The game will be played for 5 rounds, each taking turns being a midwife once.

11. At the end of the game, the points of each player on the score sheet will be collected and the player/players with the highest score will win (Used source, URL-1).